## THE JOURNAL OF

# **PARASITOLOGY**

Founded by Henry Baldwin Ward

OFFICIAL ORGAN OF THE
AMERICAN SOCIETY OF PARASITOLOGISTS

**EDITOR** 

**AUSTIN J. MACINNIS** 

#### CONSULTANTS

Roy C. Anderson Raymond M. Cable William C. Campbell J. Ralph Lichtenfels Justus F. Mueller John F. Schacher Harley G. Sheffield

#### **EDITORIAL BOARD**

Calvin G. Beames, Jr. Wilbur L. Bullock Gilbert A. Castro Raymond H. Cypess Philip A. D'Alesandro Raymond T. Damian Sherwin S. Desser **Ronald Faver** W. Eugene Foor Jacob K. Frenkel Terence J. Haves John C. Holmes Julian J. Jaffe Araxie Kilejian John S. Mackiewicz Leo Margolis Louis H. Miller Robin M. Overstreet Gerhard A. Schad John E. Ubelaker Eugene C. Weinbach Jeffrey F. Williams Kenneth A. Wright Conrad E. Yunker



VOLUME 67 1981

## **CONTENTS OF VOLUME 67**

## FEBRUARY 1981, NUMBER 1

SOCIETY BUSINESS	
Introducing President Levine. ELMER R. NOBLE	3
Presidential Address: The Prospect Before Us. NORMAN D. LEVINE	3
IMMUNOLOGY	
Spectral Model of Leishmaniasis in Congenic Strains of Mice. L. H. SEMPREVIVO, L. J. DETOLLA, H. C. PASSMORE, and N. C. PALCZUK	8
Observation on the Saliva and Salivary Gland Extract of Haemaphysalis spinigera and Rhipicephalus sanguineus sanguineus. W. A. CHINERY	15
BIOCHEMISTRY	
Effects of Hycanthone and Praziquantel on Monoamine Oxidase and Cholinesterases in Schistosoma mansoni.  RAYMOND A. KIM, JOZSEF LUKACS, RICHARD D. TANAKA, and AUSTIN J. MACINNIS	20
Transintegumental Glucose Uptake in Schistosomatium douthitti. EAIN M. CORNFORD, WILLIAM D. BOCASH, and WILLIAM H. OLDENDORF	24
Effect of Xiphidiocercarial Infection on the Activities of Glycolytic and Oxidative Enzymes in Lymnaea luteola.  R. NARAYANAN and P. VENKATESWARA RAO	31
Therapeutic Efficacy of Several Nitroimidazoles for Experimental <i>Trypanosoma cruzi</i> Infections in Mice. C. M. MALANGA, J. CONROY, and A. C. CUCKLER	35
EXPERIMENTAL	
Somatic Chromosomes of Schistosoma rodhaini, S. mattheei, and S. intercalatum. ABRAHAM I. GROSSMAN, ROBERT B. SHORT, and ROBERT E. KUNTZ	41
Descriptive Statistics of Swimming Behavior of Schistosoma mansoni Miracidia in Artificial Pond Water. GORDON G. PLORIN and DONALD E. GILBERTSON	45
Cultivation of Amblosoma suwaense (Trematoda: Brachylaimidae) in Chick Embryos. BERNARD FRIED, BONNIE L. HEYER, and ANN K. PINSKI	50
Influence of Organ Extracts of <i>Triatoma infestans</i> on Differentiation of <i>Trypanosoma cruzi</i> . ELVIRA L. D. DE ISOLA, ESTELA M. LAMMEL, VICTOR J. KATZIN, and STELLA M. GONZALEZ CAPPA	53
Isolation and Purification of Giardia Trophozoites from Rat Intestine. DENNIS E. FEELY and STANLEY L. ERLAND-SEN	59
Physiological Basis of Eimeria tenella-Induced Mortality in Individual Chickens. D. R. WITLOCK, M. D. RUFF, and M. B. CHUTE	65
Sex Pheromone Regulation of Mating Behavior in the Camel Tick <i>Hyalomma dromedarii</i> (Ixodoidea: Ixodidae).  GALILA M. KHALIL, SAMIR A. NADA, and DANIEL E. SONENSHINE	70
ECOLOGY	
The Seasonal Activity of <i>Rhipicephalus appendiculatus</i> Neumann 1901 (Acarina: Ixodidae) in the Highveld of Zimbabwe Rhodesia. N. J. SHORT and R. A. I. NORVAL	77
Life Cycle in the Laboratory and Seasonal Activity of the Tick Rhipicephalus glabroscutatum (Acarina: Ixodidae). Y. RECHAV and M. M. KNIGHT	85
TAXONOMY	
Antechinostrongylus disgubernaculus Gen. et Sp. N. (Nematoda: Angiostrongylidae) from the Marsupial Mouse, Antechinus swainsonii (Marsupialia: Dasyuridae).  DAVID M. SPRATT	90
Trigonostonema Gen. N. (Nematoda: Strongyloidea) from the Pademelon, Thylogale stigmatica (Marsupialia) in Australia, with Two New Species, T. trigonostoma Sp. N. and T. longibursata Sp. N. I. BEVERIDGE	94
Thylonema Gen. N. (Nematoda: Strongyloidea) from the Pademelon Thylogale stigmatica (Marsupialia) in Australia, with Three New Species.	101
Dermosporidium penneri Sp. N. from the Skin of the American Toad, Bufo americanus (Amphibia: Bufonidae).  JEREMY M. JAY and WILLIAM J. POHLEY	108

Scalopacarus scapanus Sp. N. (Acari: Glycyphagidae), a New Fur-Mite from Scapanus townsendii in the USA.  A. FAIN and J. O. WHITAKER, JR.	111
IN MEMORIAM	110
In Memoriam: Thomas Wright Moir Cameron. L. MARGOLIS	113
Host-Parasite Interfaces, edited by Brent B. Nickol. JANE A. STARLING	116
Handbook of Drugs and Chemicals Used in the Treatment and Control of Fish Diseases, by Nelson Herwig.  GLENN L. HOFFMAN	117
Russian-English Dictionary of Helminthology and Plant Nematology, compiled by Grazyna I. Pozniak. JUDITH H. SHAW	118
RESEARCH NOTES	
Influence of Routine Extraction Procedures in the Composition of <i>Trichinella spiralis</i> Extracts. OMAR 0.  BARRIGA	120
Anthelmintic Effects of Oxibendazole on Brugia pahangi. D. A. DENHAM, ERICA BRANDT, and D. A. LIRON	123
The Repellent Effect of Gastric Contents from Uninfected Calves for Sheathed and Exsheathed Larvae of Oster-tagia ostertagi. FRANK STRINGFELLOW	124
A Monophasic Liquid Medium (GD-NRC) for the Cultivation of <i>Leishmania donovani</i> . G. H. AL-KHATEEB and D. M. A. AL-AZAWI	127
Leech Parasitism on the Western Painted Turtle, Chrysemys picta belli, in Saskatchewan. ROSS D. MAC-CULLOCH	128
Metazoan Parasites of Two Populations of Rainbow Smelt in Newfoundland, Canada. WILLIAM THRELFALL	129
Tetrahymena pyriformis (Ehrenberg) and T. corlissi Thompson Parasitic in Stream-Dwelling Triclads (Platyhelminthes: Turbellaria). J. F. WRIGHT	131
Meristogram Analysis of a Collection of <i>Pomphorhynchus bulbocolli</i> from South-Central Kentucky. LARRY N. GLEASON and DAVID G. HUFFMAN	133
Efficacy of Four Anthelmintics in <i>Trichostrongylus axei</i> or <i>T. colubriformis</i> Infections in the Gerbil, <i>Meriones ungui-</i> culatus. ERIC PANITZ and KWOK L. SHUM	135
ANNOUNCEMENT	
Nominees Sought for Two National Scientific Awards	44
APRIL 1981, NUMBER 2	
BIOCHEMISTRY	
The Mechanism of Anticoccidial Action of Arprinocid-1-N-Oxide. CHING CHUNG WANG, PAULA M. SIMASHKE-VICH, and SOPHIE S. FAN	137
Pyrimidine Synthesis by Intracellular <i>Toxoplasma gondii</i> . JOSEPH D. SCHWARTZMAN and E. R. PFEFFER-KORN	
IMMUNOLOGY	
Interactions of Immunoconglutinin and Immune Complexes in Cold Autohemagglutination Associated with African Trypanosomiasis. WILLIAM J. RICKMAN, HERBERT W. COX, and SANTI THOONGSUWAN	159
Homologous Immunotolerance and Decreased Resistance to Schistosoma mansoni in Echinostoma revolutum-infected Mice. NIELS ØRNBJERG CHRISTENSEN, RAGNVALD NYDAL, FLEMMING FRANDSEN, and PETER	
NANSEN	164
Protective Role of Immunoglobulin G in Immunity to Strongyloides ratti. K. D. MURRELL	167
ULTRASTRUCTURE	
Specializations in the Flagellar Membrane of <i>Tritrichomonas foetus</i> . MARLENE BENCHIMOL, CEZAR ANTONIO ELIAS, and WANDERLEY DE SOUZA	174

IN VITRO CULTURE	
Pairing PAUL F. BASCH	179
cariae. PAUL F. BASCH	186
Cultivation of Schistosoma mansoni In Vitro. III. Implantation of Cultured Worms into Mouse Mesenteric Veins. PAUL F. BASCH and RICHARD HUMBERT	191
EXPERIMENTAL	
Effect of Proteolytic Enzymes on <i>Pneumocystis carinii</i> in Rat Lung Tissue. BENJAMIN J. STAHR, PETER D. WALZER, and KOKICHI YONEDA	196
Endogenous Stages of Eimeria tuskegeensis (Protozoa: Eimeriidae) in the Cotton Rat, Sigmodon hispidus.  WILLIAM L. CURRENT, JOHN V. ERNST, and GERALD W. BENZ	204
Life Cycle of Paratenuisentis ambiguus (Van Cleave, 1921) Bullock and Samuel, 1975 (Acanthocephala: Tenuisentidae). GILBERT SAMUEL and WILBUR L. BULLOCK	214
Experimental Infection of Sigmodon hispidus with Third-stage Larvae of Angiostrongylus costaricensis.  UBELAKER, JOSEPH CARUSO, and ADELA PEÑA	219
Development of <i>Plasmodium inui</i> in the <i>Aotus trivirgatus</i> Monkey.  BETTYE B. RICHARDSON, and ALAN Y. HUONG	222
PATHOLOGY	
Hemorrhagic Lesions in Stomach of Rhesus Monkey Caused by a Piscine Ascaridoid Nematode. ROBIN M.  OVERSTREET and GEORGE W. MEYER	226
Histopathologic Responses of the Jird, Meriones unguiculatus, to the Bile Duct and Pancreatic Trematode, Brachylaime microti.  LILLIAN F. MAYBERRY, JOHN R. BRISTOL, MARTHA MEDRANO, and STUART D. WILSON	236
TAXONOMY	
Sarcocystis singaporensis Zaman and Colley, (1975) 1976, Sarcocystis villivillosi Sp. N., and Sarcocystis zamani Sp. N.: Development, Morphology, and Persistence in the Laboratory Rat, Rattus norvegicus.  BEAVER and J. R. MALECKAR	241
Cercaria pomaceae Sp. N., a Dermatitis-producing Schistosome Cercaria from Pomacea paludosa, the Florida Apple Snail. WALTER S. LEEDOM and ROBERT B. SHORT	257
Zyxibothrium (Tetraphyllidea: Phyllobothriidae), a New Genus of Cestodes from Skates, with Suggestions for Diagnoses, Classification, and Revision of the Rhinebothriinae Euzet, 1953. BRIAN P. HAYDEN and RONALD A. CAMPBELL	262
Tetrapetalonema (T.) saimiri Sp. N. (Nematoda: Filarioidea) from Colombian Squirrel Monkeys, Saimiri sciureus.  J. H. ESSLINGER	268
SOCIETY BUSINESS	272
Presentation of the 1980 Henry Baldwin Ward Medal. EILEEN H. PIKE	273
Acceptance of the Henry Baldwin Ward Medal. DENNIS M. DWYER	210
LETTER TO EDITOR	1.40
Subject: Amprolium Toxicity. B. L. MUNDAY	143
BOOK REVIEWS	
Zoonoses and Communicable Diseases Common to Man and Animals, by Pedro N. Acha and Boris Szyfres.  OMAR O. BARRIGA	
The Relevance of Parasitology to Human Welfare Today, edited by Angela E. R. Taylor and Ralph Muller.  LEON JACOBS	23
ANNOUNCEMENT	10
Immunoparasitology Symposium. GARY L. ZIMMERMAN	10
RESEARCH NOTES	
Distribution of <i>Trichostrongylus axei</i> , <i>T. vitrinus</i> , and <i>T. colubriformis</i> in the Stomach and Small Intestine of the Gerbil, <i>Meriones unguiculatus</i> .  ERIC PANITZ and KWOK L. SHUM	21

Coccidia of Surface-feeding Ducks from the Central Flyway, Texas. JOHN R. BRISTOL, LILLIAN F. MAYBERRY, RUDY BUENO, and ALBERT G. CANARIS	27
Seasonal Prevalence of Hematozoa in Willow Ptarmigan ( <i>Lagopus lagopus</i> ) from Northwestern British Columbia.  JEROME L. MAHRT	27
Hymenolepis diminuta: Paraldehyde Fuchsin Staining of the Rostellar Glands following Destrobilization and Reimplantation. ROBERT D. SPECIAN	27
Composition of the Protonephridial Fluid from the Giant Trematode Hirudinella ventricosa. P. L. LUTZ, E. S. IVERSEN, and P. M. TOCCI	28
Biomphalaria straminea and Other Planorbid Molluscs in Costa Rica. W. LOBATO PARAENSE, RODRIGO ZELEDÓN, and GERARDO ROJAS	28
Attempted Transmission of Oslerus (Oslerus) osleri (=Filaroides osleri) from Coyotes to Domestic Dogs and Coyotes.  WILLIAM J. FOREYT and K. M. FOREYT	28
Bovine and Equine Onchocerciasis in Guatemala, Especially in San Vicente Pacaya. YOSHIHISA HASHIGUCHI, ISAO TADA, J. ONOFRE OCHOA A., MANUEL M. RECINOS C., and PEDRO A. MOLINA	28
Parasites of House-dwelling, Insectivorous Bats from Alabe, Kwara State, Nigeria. LUKE D. EDUNGBOLA	28
JUNE 1981, NUMBER 3	
ECOLOGY	
Ecological Analyses of Helminth Populations of Wild Canids from the Gulf Coastal Prairies of Texas and Louisiana.  JAY W. CUSTER and DANNY B. PENCE	28
ULTRASTRUCTURE	
The Stylostome of Arrenurus Spp. (Acari: Parasitengona) Studied with the Scanning Electron Microscope. B. L. REDMOND and JODY HOCHBERG	30
An Ultrastructural Study of Microgametogenesis and the Microgamete in <i>Eimeria iroquoina</i> Molnar and Fernando, 1974, in Experimentally Infected Fathead Minnows ( <i>Pimephales promelas</i> , Cyprinidae). W. BROCKLEY PATERSON and SHERWIN S. DESSER	31
Location of Carbohydrate in the Tegument of the Procercoid of Spirometra mansonoides. JOHN ADAMS OAKS and JUSTUS F. MUELLER	32
IMMUNOLOGY	
Trichinella spiralis: Partial Characterization of Antigens Isolated by Immuno-Affinity Chromatography from the Large-Particle Fraction of the Muscle Larvae. DICKSON D. DESPOMMIER and ANTHONY LACCETTI	33
Systematic Fractionation of Schistosoma mansoni Urea-Soluble Egg Antigens and their Evaluation by the Single- Tube, Kinetic-Dependent, Enzyme-Linked, Immunosorbent Assay (K-ELISA). VICTOR C. W. TSANG, YIXUN TAO, and SHIRLEY E. MADDISON	34
Autoantibodies to Red Blood Cells in Rats Infected with <i>Plasmodium berghei</i> . Z. RONAI, H. AVRAHAM, and D. SULITZEANU	35
BIOCHEMISTRY	
Localization of <sup>3</sup> H-Thymidine in Oocyte Mitochondria from <i>Schistosoma mansoni</i> . PAUL M. NOLLEN	35
Activity of Enzymes Regulating Glycogen Metabolism in Perfused Muscle-Cuticle Sections of Ascaris suum (Nematoda). MANUS J. DONAHUE, NUHA J. YACOUB, MOHAMMAD R. KAEINI, and BEN G. HARRIS	36
Photoreactivating Enzyme Activity in the Rat Tapeworm, <i>Hymenolepis diminuta</i> . AVRIL D. WOODHEAD and PHILIP M. ACHEY	36
Partial Characterization of Ribonuclease (RNASE) Activity from the Isolated and Solubilized Brush Border of Hymenolepis diminuta. H. RAY GAMBLE and PETER W. PAPPAS	37
Trypsin Inactivation by Intact Hymenolepis diminuta (Cestoda): Some Characteristics of the Inactivated Enzyme. LISA L. SCHROEDER, PETER W. PAPPAS, and GARY E. MEANS	37
EXPERIMENTAL	
Effect of Electrical Vagal Stimulation on Migration of <i>Hymenolepis diminuta</i> . D. F. METTRICK and C. H. CHO	3

Infectivity of Monomorphic and Pleomorphic <i>Trypanosoma brucei</i> Stocks Cultivated at 28 C with Various Tsetse Fly Tissues. ISABEL CUNNINGHAM, B. M. HONIGBERG, and A. M. TAYLOR	391
Migratory Kinetics of Cuterebra fontinella (Diptera: Cuterebridae) in the White-Footed Mouse, Peromyscus leucopus.  RICHARD E. GINGRICH	398
PATHOLOGY	
Histopathology in the Rainbow Darter, Etheostoma caeruleum, Resulting from Infections with the Acanthocephalans, Pomphorhynchus bulbocolli and Acanthocephalus dirus. J. MELISSA McDONOUGH and LARRY N. GLEASON	403
CHEMOTHERAPY	
Antitrypanosomal Action Enhanced by Photoaffinity Labeling with Ethidium Analogs. BETTY A. COX, WILLIAM J. FIRTH, III, SUZANNE HICKMAN, FRANK B. KLOTZ, LERENA W. YIELDING, and K. LEMONE YIELDING	410
TAXONOMY	
Raccoon Babesiosis in Connecticut, USA: Babesia lotori Sp. N. JOHN F. ANDERSON, LOUIS A. MAGNARELLI, and ALEXANDER J. SULZER.	417
Raphidascaris camura Sp. N., Hysterothylacium eurycheilum (Olsen) Comb. N., and Comments on Heterotyphlum Spaul (Nematoda: Ascaridoidea) in Marine Fishes. THOMAS L. DEARDORFF and ROBIN M. OVERSTREET	426
A New Coopies of Cobinecephalus (Nematoda: Gnathostomidae) from Neotropical Stingrays with Comments on	422
E. diazi. THOMAS L. DEARDORFF, DANIEL R. BROUKS, and THOMAS B. THORSON	433
Anthemosomatidae Fam. N. (Protozoa: Apicomplexa). NORMAN D. LEVINE	440
A New Feather Mite (Acarina: Pterolichidae) from a Fruit Pigeon (Aves: Columbidae). TILA M. PÉREZ and W. T. ATYEO	442
Echinonyssus eileenae (Acari: Laelapidae: Hirstionyssinae), a New Species from Japan Belonging to the Sciurinyssus Group. JOANN M. TENORIO	445
RESEARCH NOTES	
A Sieving Method for the Collection of Schistosome Eggs from Mouse Intestines. MARC H. DRESDEN and DORA C. PAYNE	100
Electrophoretic Demonstration of Polymorphism of Glucosephosphate Isomerase in Natural Populations of Paragonimus miyazakii. TAKESHI AGATSUMA	
Babesia microti Infections in Nonhuman Primates. JERRY A. MOORE and ROBERT E. KUNTZ	454
BOOK REVIEWS	
The Host-Invader Interplay, 3rd International Symposium on: The Biochemistry of Parasites and Host-Parasite Relationships, edited by H. Van den Bossche. R. B. PODESTA	
Biology of the Tapeworm Hymenolepis diminuta, edited by Hisao P. Arai. GARY L. UGLEM	448
ANNOUNCEMENT	
Position Available. D. M. YOUNG	456
AUGUST 1981, NUMBER 4	
IMMUNOLOGY	
Inhibition of In Vitro Macrophage Digestion Capacity by Infection with Leishmania donovani (Protozoa: Kineto-plastida). GERALD F. KUTISH and J. JANOVY, JR.	
Dependence on Macrophages of the Guinea Pig T-Cell Immune Response to Herpetomonas samuelpessoai.	. 463
Increased Resistance to Aeromonas hydrophila in Mice Experimentally Infected with Trypanosoma cruzi.  DEAN TOTAL TRYPANOS THE PROPERTY OF THE	N . 468
Partial Characterization of a <i>Trypanosoma cruzi</i> -released Decomplementing Factor. DEAN S. CUNNINGHAM THOMAS E. BREWER, RAYMOND E. KUHN, and WILLIAM H. CRAIG	,

Immunoconglutinin and Antibody Against Fibrinogen Products in Hemolytic Anemia and Nephritis Resulting from Infection with a Haemobartonella-like Agent. SANTI THOONGSUWAN and HERBERT W. COX	481
ULTRASTRUCTURE	
Ultrastructure of Developing Gamonts of <i>Eimeria contorta</i> Haberkorn, 1971 (Protozoa, Sporozoa) with Emphasis on the Host-Parasite Interface. BODO E. G. MUELLER, SHERWIN S. DESSER, and AXEL HABERKORN	487
Ultrastructure of Macrogametogenesis, Macrogametes and Young Oocysts of Eimeria iroquoina Molnar and Fernando, 1974 in Experimentally Infected Fathead Minnows (Pimephales promelas, Cyprinidae). W. BROCKLEY PATERSON and SHERWIN S. DESSER	496
BIOCHEMISTRY	
Glycogen Metabolizing Enzymes during Starvation and Feeding of Ascaris suum Maintained in a Perfusion Chamber.  MANUS J. DONAHUE, NUHA J. YACOUB, MOHAMMAD R. KAEINI, RUTHANN A. MASARACCHIA, and BEN G.  HARRIS	505
CHEMOTHERAPY	
Effect of lonophores on Survival, Penetration, and Development of Eimeria tenella Sporozoites In Vitro. CHARLES K. SMITH, II, REGINALD B. GALLOWAY, and SANDY L. WHITE	511
EXPERIMENTAL	
Trypanosoma cruzi: Selective Isolation of Pure Trypomastigotes from Cultured Muscle Cells. DENNIS M. SCHMATZ and P. KEITH MURRAY	517
Trypanosoma danilewskyi: A New Multiplication Process for Trypanosoma (Protozoa: Kinetoplastida). PATRICK T. K. W00	522
Philophthalmus gralli: Chemosensitivity of Miracidia. HOSSEIN KESHAVARZ-VALIAN, PAUL M. NOLLEN, and GREGORY MAYNARD	527
Survival Characteristics of the Free-Living Miracidial Population of <i>Transversotrema patialense</i> (Soparkar) (Digenea: Transversotrematidae). D. A. P. BUNDY	531
Morphology of Reproductive Organs and Oogenesis in Bisexual and Unisexual Transplants of Mature Schistosoma mansoni Females. ELLEN R. CLOUGH	535
Differences in Susceptibility of Rat Strains to Experimental Infection with <i>Taenia taeniaeformis</i> . J. F. WILLIAMS, A. M. SHEARER, and M. M. RAVITCH	540
The Effects of Host Sex and Hormones on <i>Trichinella spiralis</i> in the Mouse. JOHN J. REDDINGTON, GEORGE L. STEWART, GARY W. KRAMAR, and MARSHA A. KRAMAR	548
Development and Larval Morphology of Loa loa in Experimental Primate Hosts. MARK L. EBERHARD and THOMAS C. ORIHEL	556
Larval Gnathostomes Found in Reptiles in Japan and Experimental Life Cycle of Gnathostoma nipponicum.  MASATAKA KOGA and YOICHI ISHII	565
Dual Infections of <i>Culex tritaeniorhynchus</i> with West Nile Virus and <i>Nosema algerae</i> . R. AKHTAR, C. G. HAYES, and S. BAQAR	571
TAXONOMY	
Collastoma kozloffi Sp. N., a Neorhabdocoel Turbellarian from the Intestine of the Sipunculan Themiste dyscrita.  CLINTON A. WESTERVELT, JR.	574
BOOK REVIEWS	
The Protozoa: An Introduction to Protozoology, by John M. Farmer. EUGENE C. BOVEE	578
Physiology of Parasites, by Leslie H. Chappell. GARY L. UGLEM	579
The Laboratory Diagnosis of Toxoplasmosis, by D. G. Fleck and W. Kwantes. LYNNE S. GARCIA	579
RESEARCH NOTES	
A Simple Apparatus for Large-Scale Production of <i>Plasmodium falciparum</i> In Vitro. JAMES B. JENSEN	580
Schistosoma mansoni: Conditions Contributing to Maximal Cercarial Harvests. M. STIREWALT	582
A Simple Device to Immobilize Mice for Infection with Schistosoma mansoni Cercariae. MIRIAM TENDLER and R. MAGALHÄES PINTO	583
Antibody Response to <i>Leishmania mexicana</i> in African White-Tailed Rats ( <i>Mystromys albicaudatus</i> ). PETER C. SAYLES, KENNETH W. HUNTER, ERICH E. STAFFORD, and LARRY D. HENDRICKS	585

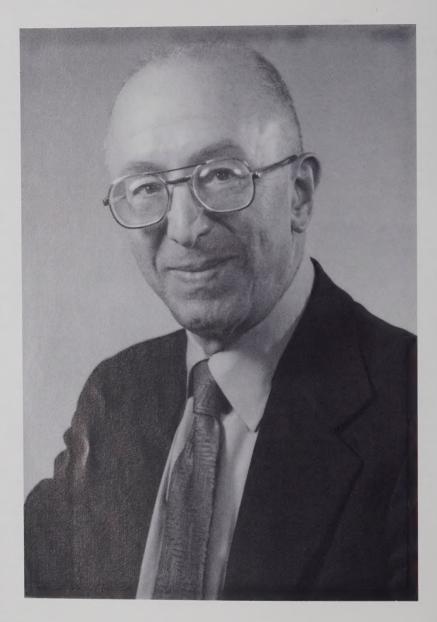
The Antigenicity of Eimeria maxima Populations Obtained from Commercial Farms. M. W. SHIRLEY and S. R. HOYLE	587
Partial Characterization of Radiolabeled Antigens from Adult Schistosoma haematobium. EUGENE G. HAYUNGA, WILTON E. VANNIER, and RUBY Y. CHESNUT	589
Antigens in the Serum of <i>Macaca fascicularis</i> Infected with Tetrathyridia of <i>Mesocestoides corti.</i> FRANKLIN SOGANDARES-BERNAL, ROBERT E. KUNTZ, MICHAEL V. DENNIS, MARIETTA VOGE, JERRY A. MOORE, and TAO-CHENG HUANG.	591
Specificity of <i>Trichostrongylus colubriformis</i> Protective Antigens. T. L. W. ROTHWELL	592
Electrophoretic Differences Between Schistosoma mansoni and S. rodhaini. MADELEINE FLETCHER, PHILIP T. LOVERDE, and ROBERT E. KUNTZ	593
Brachycoelium Sp. from Georgia Salamanders. L. G. SELLERS, AMY R. GREGORY, and STACIE WONG	595
Plagiorhynchus formosus Van Cleave, 1918, A Synonym of Plagiorhynchus cylindraceus (Goeze, 1782) Schmidt and Kuntz, 1966. GERALD D. SCHMIDT	597
IKI-Solution Used for Flotation of Coccidia (Eimeria Sp.) and Precipitation of Oil from Fish Liver. BJØRN BERLAND and DÁNJAL PETUR HØJGAARD	598
Virulent Naegleria Sp. Isolated from a River in Cadiz (Spain). C. MASCARÓ, C. FLUVIÁ, A. OSUNA, and D. GUEVARA	599
ANNOUNCEMENT	
Editorial Acknowledgment	600
OCTOBER 1981, NUMBER 5	
BIOCHEMISTRY	
Relationships Between Pyruvate Decarboxylation and Branched-Chain Volatile Acid Synthesis in Ascaris Mitochondria.  RICHARD KOMUNIECKI, PATRICIA R. KOMUNIECKI, and HOWARD J. SAZ	601
Isoprenoid Biosynthesis in Adult Brugia pahangi and Dirofilaria immitis. J. C. W. COMLEY and J. J. JAFFE	609
Type I Phosphodiesterase in the Isolated, Brush-Border Membrane of <i>Hymenolepis diminuta</i> . H. R. GAMBLE and P. W. PAPPAS	617
Involvement of Malarial Proteases in the Interaction Between the Parasite and Host Erythrocyte in <i>Plasmodium knowlesi</i> Infections. H. S. BANYAL, G. C. MISRA, C. M. GUPTA, and G. P. DUTTA	623
ULTRASTRUCTURE STATE OF THE CONTROL	
Fine Structure of the Foveal Glands and Foveae Dorsales of the American Dog Tick, Dermacentor variabilis (Say).  DANIEL E. SONENSHINE, PAUL J. HOMSHER, JERRY S. VANDEBERG, and DAWN DAWSON	627
The Value of Cuticular Fine Structure in Identification of Juvenile Anisakine Nematodes.  DAVID W. FREDERICK- SEN and ROBERT D. SPECIAN	647
IMMUNOLOGY F KIEDSZENBALIM C A	
Antibody-Independent, Natural Resistance of Birds to <i>Trypanosoma cruzi</i> Infection. F. KIERSZENBAUM, C. A. GOTTLIEB, and DELIA B. BUDZKO	656
EXPERIMENTAL POPERT R SHORT	
Conventional Giemsa and C-Banded Karyotypes of Schistosoma mansoni and S. rodhaini. ROBERT B. SHORT and ABRAHAM I. GROSSMAN	001
Effects of Acanthocephalans on Pigmentation of Freshwater Isopods. DAVID F. OETINGER and BRENT B. NICKOL	012
Comparative Analysis of Mobility and Ultrastructure of Intramuscular Larvae of <i>Trichinella spiralis</i> and <i>Trichinella pseudospiralis</i> . T. O. AL KARMI and G. M. FAUBERT	000
Chemical Attraction in the Absence of Worm-Mediated Tactile Behavior in <i>Trichinella spiralis</i> . M. BELOSEVIC, T. A. DICK, and K. CHADEE	092
Accessory Nuclei in Female Ascaris suum. PAUL GOLDSTEIN	697
Schistosoma mansoni, NIH-Sm-PR-2 Strain, in Susceptible and Nonsusceptible Stocks of Biomphalaria glabrata: Comparative Histology. JOHN T. SULLIVAN and CHARLES S. RICHARDS	702

The Effect of Mebendazole on Sheep Hydatid Cysts as Demonstrated by Electron Microscopy. M. A. AL-DABAGH, M. I. AL-MOSLIH, A. VERHEYEN, M. A. SHAFIK, T. A. AL-JANABI, A. Y. AL-RAWAS, M. A. ISMAIL, A. H. FAWZI, M. S. AL-ANI, and S. RASSAM	709
Laboratory Evaluation of the Molluscicidal Properties of Aridan, an Extract from <i>Tetrapleura tetraptera</i> (Mimosaceae) on <i>Bulinus globosus</i> . CLEMENT O. ADEWUNMI and VICTOR O. MARQUIS	713
SURVEYS AND SYSTEMATICS	
Adult Digenea from Upper Midwest Hirudinid Leeches. FREDERICK J. VANDE VUSSE, TOMAS D. FISH and MARY PAULA NEUMANN	717
Nematode and Cestode Parasites from the Roseate Spoonbill, <i>Ajaia ajaja</i> , including <i>Paradilepis diminuta</i> Sp. N. (Cestoda: Dilepididae). RICHARD HUEY and NORMAN O. DRONEN, JR	721
The Occurrence in Australia of the Bovine Coccidia Eimeria bukidnonensis Tubangui 1931 and E. wyomingensis Huizinga and Winger 1942. RICHARD PARKER	724
BOOK REVIEWS	
Schadschnecken und ihre Bekämpfung, by Dora Godan. JOHANNES DÖNGES	655
Cellular Interactions in Symbiosis and Parasitism, edited by C. B. Cook, P. W. Pappas, and E. D. Rudolph. RICHARD W. GREENE	712
ANNOUNCEMENT	
Third International Congress of Ecology. DZIEKANÓW LEŚNY	626
RESEARCH NOTES	
Chromosome Numbers of Some Schistosomes. PHILIP T. LOVERDE and R. E. KUNTZ	726
Behavior of Schistosoma mansoni Miracidia upon Contacting Solid Surfaces. GORDON G. PLORIN and DONALD E. GILBERTSON	727
Microfilaremia and Antibody Responses in CBA/H and CBA/N Mice Following Injection of Microfilariae of Brugia malayi.  JAMES P. THOMPSON, RICHARD B. CRANDALL, CATHERINE A. CRANDALL, and JOHN T. NEILSON	728
Effect of Haemonchus contortus Extracts on Coagulation of Ovine Plasma. CRAIG E. GREENE, KATHERINE PRESTWOOD, and VICTOR C. TSANG	730
Effect of Schistosoma mansoni Infections on Challenge Infections with Fasciola hepatica in Mice. GEORGE V. HILLYER	731
The Prepatent and Patent Periods of Fasciola hepatica in Cattle in Puerto Rico. DELFÍN DE LEÓN, RUBÉN QUIÑONES, and GEORGE V. HILLYER	734
A Method for Laboratory Maintenance of <i>Lymnaea natalensis</i> and for Mass Production of <i>Fasciola gigantica</i> Metacercariae. H. MADSEN and J. MONRAD	735
Passage of Host Serum Components, Including Antibody, Across the Digestive Tract of Dermacentor variabilis (Say). STEVEN ACKERMAN, F. BRIAN CLARE, T. W. MCGILL, and DANIEL E. SONENSHINE	737
Visceral Leishmaniasis in the Squirrel Monkey (Saimiri sciurea). W. L. CHAPMAN, JR. and W. L. HANSON	740
Rhabdospora thelohani Laguessé, 1906 Is Not a Member of the Apicomplexa. W. BROCKLEY PATERSON and SHERWIN S. DESSER	741
Trypanosoma musculi Infections in Two Mouse Strains Exposed to Various Environmental Temperatures.  K. SEN, JACQUELINE L. LYLE, VISHNU D. PUROHIT, and DAVID R. LINCICOME	744
Dirofilaria immitis in Stray Dogs from Richmond County, Georgia. BRUCE A. LINDEMANN and JOHN W. MCCALL	746
Susceptibility of the Knot (Calidris canutus) to Plasmodium hermani. DONALD J. FORRESTER and PAMELA P. HUMPHREY	747
Host Record for the Leech <i>Placobdella nuchalis</i> Sawyer and Shelley (Rhynchobdella: Glossiphoniidae). ROWLAND M. SHELLEY and ALVIN L. BRASWELL	748
Growth and Survival of a Trapped Fluke. JOHN B. VILLELLA and VICTOR A. CAPRILES	749
Kiricephalus tortus (Pentastomida), Rediscovery from the Cat Shark Hemiscillium indicum.  M. KRISHNASAMY and J. T. SELF	750
Production of <i>Rhipicephalus appendiculatus</i> with High Infections of <i>Theileria parva</i> . A. S. YOUNG and B. L. LEITCH	751
The Extraction of Sarcoptes scabiei from Mammalian Hosts.	753
The Levels of Some Metabolites in Moniliformis dubius (Acanthocephala). R. A. CORNISH, J. WILKES, and	
D. F. METTRICK	754

Studies on Potential Carbohydrate Regulatory Enzymes and Metabolite Levels in <i>Macracanthorhynchus hirudinaceus</i> .  MANUS J. DONAHUE, NUHA J. YACOUB, MOHAMMAD R. KAEINI, SUE TU, RICHARD A. HODZI, and BEN G. HARRIS	756
Serum Lipid Values in Golden Hamsters Infected with Ancylostoma ceylanicum.  S. GUJRAL, N. RAJGOR, C. D. LOVEKAR, and D. SETH	758
Adenosine Deaminase (E.C. 3.5.4.4) from <i>Hymenolepis diminuta</i> . H. R. GAMBLE and P. W. PAPPAS	759
DECEMBER 1981, NUMBER 6	
IMMUNOLOGY	
Disruption and Removal of the Tegument from Schistosoma mansoni with Triton X-100. JOHN ADAMS OAKS, GEORGE D. CAIN, DONALD A. MOWER, and R. K. RAJ	761
Light and Electron Microscopic Appearance of Rat Peritoneal Mast Cells Adhering to Schistosomula of Schistosoma mansoni by Means of Complement or Antibody. JOHN P. CAULFIELD, ANN HEIN, GINA MOSER, and ALAN SHER	776
Scanning Electron Microscopy of In Vitro Serum-Mediated Destruction of Juvenile Fasciola hepatica. WILLIAM	
P. ECKBLAD, LYNN F. WOODARD, and BRUCE Z. LANG	784
Selective Interference with Granulocyte Function Induced by <i>Echinostoma paraensei</i> (Trematoda) Larvae in <i>Biom-phalaria glabrata</i> (Mollusca). KIAN JOE LIE, KATHLEEN H. JEONG, and DONALD HEYNEMAN	790
Resistance to <i>Echinococcus granulosus</i> Infection in Lambs. DAVID D. HEATH, STANTON N. PARMETER, PETER J. OSBORN, and STEPHEN B. LAWRENCE	797
In Vitro Development of Ascaris suum from Third- to Fourth-Stage Larvae and Detection of Metabolic Antigens in Multi-Well Culture Systems. JOSEPH F. URBAN, JR. and FRANK W. DOUVRES	800
Cytophilic Antibody in Experimental Chagas' Disease. RAYMOND E. KUHN and GERALD W. CASSIDA	807
Resistance and Cross-Resistance of Guinea Pigs to Dermacentor andersoni Stiles, D. variabilis (Say), Amblyomma americanum (Linnaeus), and Ixodes scapularis Say. TOM L. MCTIER, JOHN E. GEORGE, and SARA N. BENNETT	813
BIOCHEMISTRY	
Coupling of Mitochondrial NADPH: NAD Transhydrogenase with Electron Transport in Adult <i>Hymenolepis diminuta</i> .  CARMEN F. FIORAVANTI	823
Purification and Properties of Phosphoenolpyruvate Carboxykinase from <i>Hymenolepis diminuta</i> (Cestoda).  J. WILKES, R. A. CORNISH, and D. F. METTRICK	832
Pathway of Formation of Branched-Chain Volatile Fatty Acids in <i>Ascaris</i> Mitochondria. RICHARD KOMUNIECKI, PATRICIA R. KOMUNIECKI, and HOWARD J. SAZ	841
Presence of a Peculiar Pathway of Glucose Metabolism in Infective Forms of <i>Trypanosoma brucei</i> Cultured from Salivary Glands of Tsetse Flies. R. MUTURI NJOGU and M. NYINDO	847
MORPHOLOGY AND ULTRASTRUCTURE	
Developmental Stages of <i>Hepatozoon lygosomarum</i> (Doré 1919) Comb. N. (Protozoa: Haemogregarinidae), a Parasite of a New Zealand Skink, <i>Leiolopisma nigriplantare</i> . BERTHA ALLISON and SHERWIN S. DESSER	002
Myxobilatus mictospora (Kudo, 1920) (Myxozoa: Myxosporea) in the Largemouth Bass (Micropterus salmoides Lacépède): Plasmodium Morphology and Fine Structure. OLIVER J. BOOKER and WILLIAM L. CURRENT	859
Surface Ultrastructure of Spores in Three Genera of Balanosporida, Particularly in <i>Minchinia armoricana</i> van Banning, 1977—the Taxonomic Significance of Spore Wall Ornamentation in the Balanosporida. FRANK O. PERKINS and PAUL VAN BANNING	866
In Vitro Effects of Inhibitors on Ingestion and Digestion of Hemoglobin by Schistosoma mansoni Schistosomules.  BURTON J. BOGITSH	010
Anatomy of the Cerebral Ganglion in <i>Oligacanthorhynchus tortuosa</i> (Acanthocephala) from the Opossum ( <i>Didelphis virginiana</i> ). TOMMY T. DUNAGAN and DONALD M. MILLER	
EXPERIMENTAL	
Fascipliasis: Is the Anemia Caused by Hematophagia? ROBERT N. SPENGLER and HADAR ISSEROFF	886

Role of a Serum Factor in Enhancement of In Vitro Interactions Between <i>Plasmodium berghei</i> Sporozoites and Hamster Peritoneal Macrophages. SCOTT HOLMBERG, SEYMOUR SCHULMAN, and JEROME P. VANDER-BERG	893
In Vivo Pheromone Activity in Nippostrongylus brasiliensis (Nematoda). GARTH H. GLASSBURG, EDWARD ZALISKO, and LEON W. BONE	898
Gut Propulsion in Mice Infected with Trichinella spiralis. MICHAEL V. K. SUKHDEO and NEIL A. CROLL	906
A Comparative Study of <i>Trichinella spiralis</i> (Owen, 1835) and <i>Trichinella pseudospiralis</i> (Garkavi, 1972). MARSHA KRAMAR, GEORGE L. STEWART, and LARRY CHARNIGA	911
The Effects of Host Sex on Enteric Response to Infection with <i>Trichinella spiralis</i> . LARRY CHARNIGA, GEORGE L. STEWART, GARY W. KRAMAR, and JACKIE A. STANFIELD	917
Immediate and Latent Effects Induced by the Antiallatotropin Precocene 2(P2) on Embryonic Dermacentor variabilis (Say) (Acari: Ixodidae).  M. J. HAYES and J. H. OLIVER, JR.	923
SURVEY	
Epidemiology of <i>Alaria marcianae</i> Mesocercariae in Louisiana. WESLEY L. SHOOP and KENNETH C. CORKUM SOCIETY BUSINESS	928
Seventieth Council Meeting Minutes. CLAYTON R PAGE, III	932
Fifty-fifth Annual Business Meeting. CLAYTON R PAGE, III	
CRITICAL COMMENT	
False-Negative Serologic Tests for <i>Toxoplasma</i> in Birds. J. K. FRENKEL	952
RESEARCH NOTES	
Effect of Anaplasma marginale Infection upon Blood Gases and Electrolytes in Splenectomized Calves. P. C. ALLEN and K. L. KUTTLER	954
Experimental Development of Resistance to Amprolium or Dinitolmide in <i>Eimeria acervulina</i> and Its Effect on Inhibition of Sporulation of Occysts. GREG F. MATHIS and L. R. MCDOUGALD	956
In Vitro Culture of Larval Anisakid Parasites of the Chilean Hake Merluccius gayi.  BARROS, GABRIEL SANTANDER, and CONSUELO ALCALDE	958
The Effect of Silica Injections on the Rejection of Eimeria from Nonspecific Hosts.  MICHAEL H. KOGUT and PETER L. LONG	960
Ultrastructure of In Vivo Lysis of Sarcocystis cruzi Merozoites. C. A. SPEER and J. P. DUBEY	961
Efficacy of P-Chlorophenylisothiocyanate (Sch 20350) Against Parasites of Ruminants and Horses. ERIC PANITZ and KWOK L. SHUM	964
Susceptibility of Mammalian Hosts to Larvae of <i>Gnathostoma doloresi</i> Tubangui 1925. MASATAKA KOGA and YOICHI ISHII	965
Observations on the Attachment Scheme of the Parasitic Copepod <i>Pandarus satyrus</i> (Copepoda: Pandaridae).  GEORGE W. BENZ	966
New Methods for the Isolation of Bloodstream Trypomastigotes of <i>Trypanosoma cruzi.</i> KD. HUNGERER, C. SCHAUMBURG, and J. DIONYSIUS	967
Failure of White-tailed Deer (Odocoileus virginianus) to Serve as Experimental Hosts for Ostertagia ostertagi Stiles, 1892. MICHAEL B. MCGHEE	969
ANNOUNCEMENTS	
Correction	
INDEX, VOLUME 67	
Mailing Dates for Volume 67, 1981	
Statement of Ownership	





norman D. Levine